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IN THE CLAIMS:

Claims 1-11, 13, 16-24, 26, 51-54, 56-61, 63, 66, and 68-74 have been amended herein. Claims 55 and 67 have been cancelled. Please note that all claims currently pending and under consideration in the referenced application are shown below. Please enter these claims as amended. This listing of claims will replace all prior versions and listings of claims in the application. A claim listing that does not show changes made is attached hereto as Appendix A, as requested by the Examiner.

Listing of Claims:

1. (currently amended) A method of molding a semiconductor assembly comprising: providing a transfer mold having an inner surface defining at least one mold cavity; providing at least one semiconductor substrate having ~~at least one~~ active surface with conductive elements thereon and a back surface thereof; positioning ~~said the~~ at least one semiconductor substrate in ~~said the~~ at least one mold cavity of ~~said the~~ transfer mold so that portions of ~~said the~~ inner surface of ~~said the~~ transfer mold abut with ~~said the~~ conductive elements of ~~said the~~ at least one active surface of ~~said the~~ at least one semiconductor substrate; orienting the active surface of the at least one semiconductor substrate substantially vertically within the at least one mold cavity; configuring ~~said the~~ portions of ~~said the~~ inner surface of ~~said the~~ transfer mold to comprise a plurality of recesses formed therein, each recess of ~~said the~~ plurality defined by an imperforate boundary wall sized and configured to at least partially substantially conformally receive a portion of corresponding conductive elements protruding from the at least one semiconductor substrate; and introducing a flowable material ~~onto said at least one surface of said at least one semiconductor substrate in a substantially vertical direction in into~~ said the at least one mold cavity so that ~~said the~~ flowable material flows around ~~said the~~ portions of ~~said the~~ inner surface of ~~said the~~

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transfer mold abutting with said the conductive elements on said the ~~at least one active~~ surface of said the at least one semiconductor substrate.

2. (currently amended) The method according to claim 1, wherein said the providing said the transfer mold comprises configuring said the transfer mold so that said the at least one cavity is substantially vertically oriented with at least one gate at a lower portion of the transfer mold and at least one vent at an upper portion of the transfer mold.

3. (currently amended) The method according to claim 2, wherein said the introducing said the flowable material comprises:
substantially filling said the at least one cavity in said the substantially vertical direction.

4. (currently amended) The method according to claim 3, wherein said the substantially filling said the at least one cavity comprises:
introducing said the flowable material through said the at least one gate until a single flow front of said the flowable material contacts said the at least one vent at said the upper portion of said the at least one cavity.

5. (currently amended) The method according to claim 2, wherein said the positioning said the at least one semiconductor substrate further comprises:
positioning said the at least one semiconductor substrate substantially vertically.

6. (currently amended) The method according to claim 4, wherein said the introducing said the flowable material comprises:
filling said the at least one cavity until a single flow front of said the flowable material contacts said the at least one vent.

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7. (currently amended) The method according to claim 6, wherein said the filling said the at least one cavity with said the flowable material comprises:
at least partially encapsulating said the at least one semiconductor substrate.

8. (currently amended) The method according to claim 1, wherein said the introducing said the flowable material in said the substantially vertical direction comprises:
inducing a substantially uniform flow front.

9. (currently amended) The method according to claim 1, wherein said the introducing said the flowable material comprises introducing said the flowable material onto a the substantially vertically oriented active surface of said the at least one semiconductor substrate.

10. (currently amended) The method according to claim 1, wherein said the introducing said the flowable material onto said the at least one active surface of said the at least one semiconductor substrate in said the substantially vertical direction comprises:
substantially preventing voids in said the flowable material.

11. (currently amended) The method according to claim 1, wherein said the providing said the at least one semiconductor substrate comprises:
providing an assembly including said the at least one semiconductor substrate.

Claim 12. (canceled)

13. (currently amended) The method according to claim 11, wherein said the providing said the assembly comprises:
providing said the assembly with said the at least one semiconductor substrate comprising at least one semiconductor die having said the conductive elements in the form of bond pads thereon, said the at least one semiconductor die including conductive structures protruding from said the bond pads.

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Claims 14-15. (canceled)

16. (currently amended) The method according to claim 1, wherein ~~said~~the providing ~~said~~the at least one semiconductor substrate comprises: providing at least one individual semiconductor die.

17. (currently amended) The method according to claim 16, wherein ~~said~~the providing ~~said~~the at least one individual semiconductor die comprises: providing ~~said~~the at least one individual semiconductor die with conductive structures protruding therefrom to be received by and abut with ~~said~~the portions of ~~said~~the at least one cavity.

18. (currently amended) The method according to claim 1, wherein ~~said~~the providing ~~said~~the at least one semiconductor substrate comprises: providing a large-scale semiconductor substrate.

19. (currently amended) The method according to claim 18, wherein ~~said~~the providing ~~said~~the large-scale semiconductor substrate comprises: providing a plurality of semiconductor dice interconnected to each other, each of ~~said~~the plurality comprising ~~said~~the conductive elements in the form of bond pads and conductive structures protruding from ~~said~~the bond pads.

20. (currently amended) The method according to claim 18, wherein ~~said~~the providing ~~said~~the large-scale semiconductor substrate comprises: providing at least a portion of a wafer.

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21. (currently amended) The method according to claim 1, wherein ~~said~~the introducing ~~said~~the flowable material includes capillary action acting on ~~said~~the flowable material.

22. (currently amended) The method according to claim 1, wherein ~~said~~the introducing ~~said~~the flowable material includes positive pressure acting on ~~said~~the flowable material.

23. (currently amended) The method according to claim 1, wherein ~~said~~the introducing ~~said~~the flowable material includes negative pressure acting on ~~said~~the flowable material.

24. (currently amended) The method according to claim 6, wherein ~~said~~the filling ~~said~~the at least one cavity with ~~said~~the flowable material comprises substantially completely encapsulating ~~said~~the at least one semiconductor substrate.

Claim 25. (cancelled)

26 (currently amended) The method according to claim 1, wherein providing at least one semiconductor substrate having the at least one active surface with conductive elements thereon comprises providing at least one semiconductor substrate having at least one an active surface with conductive columns or pillars.

Claims 27-50. (canceled)

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51. (currently amended) A method for encapsulating a substrate that substantially prevents voids in an encapsulant, the method comprising:
providing a transfer mold having an inner surface defining at least one mold cavity;
providing at least one semiconductor substrate having ~~at least one an~~ active surface with conductive elements thereon and a back surface thereof;
positioning ~~said the~~ at least one semiconductor substrate in ~~said the~~ at least one mold cavity of ~~said the~~ transfer mold so that portions of ~~said the~~ inner surface of ~~said the~~ transfer mold abut with ~~said the~~ conductive elements of ~~said the~~ at least one active surface of ~~said the~~ at least one semiconductor substrate;
orienting the active surface of the at least one semiconductor substrate substantially vertically within the at least one mold cavity;
configuring ~~said the~~ portions of ~~said the~~ inner surface of ~~said the~~ transfer mold to comprise a plurality of recesses formed therein, each of ~~said the~~ recesses having an imperforate boundary wall sized and configured to at least partially substantially conformally receive a portion of a corresponding conductive element protruding from the at least one semiconductor substrate; and
introducing a flowable material ~~onto said at least one surface of said at least one semiconductor substrate in an upward, non-horizontal direction in into~~ said the at least one mold cavity so that ~~said the~~ flowable material flows around ~~said the~~ portions of ~~said the~~ inner surface of ~~said the~~ transfer mold abutting with ~~said the~~ conductive elements on ~~said the~~ at least one active surface of ~~said the~~ at least one substrate.

52. (currently amended) The method according to claim 51, wherein ~~said the~~ providing ~~said the~~ transfer mold comprises configuring ~~said the~~ transfer mold so that ~~said the~~ at least one cavity is non-horizontally oriented with at least one gate at a lower portion of the transfer mold and at least one vent at an upper portion of the transfer mold.

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53. (currently amended) The method according to claim 52, wherein ~~said~~the introducing ~~said~~the flowable material comprises:
substantially filling ~~said~~the at least one cavity in a non-horizontal direction.

54. (currently amended) The method according to claim 53, wherein ~~said~~the substantially filling ~~said~~the at least one cavity comprises:
introducing ~~said~~the flowable material through ~~said~~the at least one gate until a single flow front of ~~said~~the flowable material contacts ~~said~~the at least one vent at ~~said~~the upper portion of ~~said~~the at least one cavity.

55. (canceled) ~~The method according to claim 52, wherein said positioning said at least one semiconductor substrate further comprises:
positioning said at least one semiconductor substrate substantially vertically.~~

56. (currently amended) The method according to claim ~~55~~51, wherein ~~said~~the introducing ~~said~~the flowable material comprises:
filling ~~said~~the at least one cavity until ~~said~~the single flow front of ~~said~~the flowable material contacts ~~said~~the at least one vent.

57. (currently amended) The method according to claim 56, wherein ~~said~~the filling ~~said~~the at least one cavity with ~~said~~the flowable material comprises:
at least partially encapsulating ~~said~~the at least one semiconductor substrate.

58. (currently amended) The method according to claim 51, wherein ~~said~~the introducing ~~said~~the flowable material ~~in said upward, non-horizontal direction~~ comprises:
inducing a substantially uniform flow front.

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59. (currently amended) The method according to claim 51, wherein ~~said the~~ introducing ~~said the~~ flowable material comprises permitting ~~said the~~ flowable material to flow onto a ~~the~~ substantially vertically-oriented active surface of ~~said the~~ at least one semiconductor substrate.

60. (currently amended) The method according to claim 51, wherein ~~said the~~ introducing ~~said the~~ flowable material ~~onto said at least one surface of said at least one substrate in said upward, non-horizontal direction~~ comprises: substantially preventing voids in ~~said the~~ flowable material.

61. (currently amended) The method according to claim 51, wherein ~~said the~~ providing ~~said the~~ at least one semiconductor substrate comprises: providing an assembly including ~~said the~~ at least one semiconductor substrate.

Claim 62. (canceled)

63. (previously presented) The method according to claim 61, wherein ~~said the~~ providing ~~said the~~ assembly comprises: providing ~~said the~~ assembly with ~~said the~~ at least one semiconductor substrate including at least one semiconductor die having ~~said the~~ conductive elements in the form of bond pads thereon, ~~said the~~ at least one semiconductor die including conductive structures protruding from ~~said the~~ bond pads.

Claims 64-65. (canceled)

66. (previously presented) The method according to claim 51, wherein ~~said the~~ providing ~~said the~~ at least one semiconductor substrate comprises: providing at least one individual semiconductor die.

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67. (Cancelled) The method according to claim 66, wherein ~~said~~ providing ~~said~~ at least one individual semiconductor die comprises:
providing ~~said~~ at least one individual semiconductor die with conductive structures protruding therefrom to be received by and abut with said portions of ~~said~~ at least one cavity.

68. (previously presented) The method according to claim 51, wherein ~~said~~the providing ~~said~~the at least one semiconductor substrate comprises:
providing a large-scale semiconductor substrate.

69. (previously presented) The method according to claim 68, wherein ~~said~~the providing ~~said~~the large-scale semiconductor substrate comprises:
providing a plurality of semiconductor dice interconnected to each other, each of ~~said~~the plurality comprising at least one of bond pads and conductive structures protruding from ~~said~~the bond pads.

70. (original) The method according to claim 68, wherein ~~said~~the providing ~~said~~the large-scale substrate comprises:
providing at least a portion of a wafer.

71. (previously presented) The method according to claim 51, wherein ~~said~~the introducing ~~said~~the flowable material includes capillary action acting on ~~said~~the flowable material.

72. (previously presented) The method according to claim 51, wherein ~~said~~the introducing ~~said~~the flowable material includes positive pressure on ~~said~~the flowable material.

73. (previously presented) The method according to claim 51, wherein ~~said~~the introducing ~~said~~the flowable material includes negative pressure on ~~said~~the flowable material.

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74. (currently amended) The method according to claim 56, wherein ~~said~~the filling ~~said~~the at least one cavity with ~~said~~the flowable material comprises at least partially encapsulating ~~said~~the at least one semiconductor substrate.

75. (cancelled)

76. (currently amended) The method according to claim 51, wherein providing at least one semiconductor substrate having ~~at least one~~an active surface with conductive elements thereon comprises providing at least one semiconductor substrate having ~~at least one~~an active surface with conductive columns or pillars.

Claims 77-98. (canceled)

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Exhibit A

(Clean Claim Listing)

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1. A method of molding a semiconductor assembly comprising:
providing a transfer mold having an inner surface defining at least one mold cavity;
providing at least one semiconductor substrate having an active surface with conductive elements thereon and a back surface thereof;
positioning the at least one semiconductor substrate in the at least one mold cavity of the transfer mold so that portions of the inner surface of the transfer mold abut with the conductive elements of the active surface of the at least one semiconductor substrate;
orienting the active surface of the at least one semiconductor substrate substantially vertically within the at least one mold cavity;
configuring the portions of the inner surface of the transfer mold to comprise a plurality of recesses formed therein, each recess of the plurality defined by an imperforate boundary wall sized and configured to at least partially substantially conformally receive a portion of corresponding conductive elements protruding from the at least one semiconductor substrate; and
introducing a flowable material into the at least one mold cavity so that the flowable material flows around the portions of the inner surface of the transfer mold abutting with the conductive elements on the active surface of the at least one semiconductor substrate.

2. The method according to claim 1, wherein the providing the transfer mold comprises configuring the transfer mold so that the at least one cavity is substantially vertically oriented with at least one gate at a lower portion of the transfer mold and at least one vent at an upper portion of the transfer mold.

3. The method according to claim 2, wherein the introducing the flowable material comprises:
substantially filling the at least one cavity in the substantially vertical direction.

4. The method according to claim 3, wherein the substantially filling the at least one cavity comprises:

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introducing the flowable material through the at least one gate until a single flow front of the flowable material contacts the at least one vent at the upper portion of the at least one cavity.

5. The method according to claim 2, wherein the positioning the at least one semiconductor substrate further comprises:
positioning the at least one semiconductor substrate substantially vertically.

6. The method according to claim 4, wherein the introducing the flowable material comprises:
filling the at least one cavity until a single flow front of the flowable material contacts the at least one vent.

7. The method according to claim 6, wherein the filling the at least one cavity with the flowable material comprises:
at least partially encapsulating the at least one semiconductor substrate.

8. The method according to claim 1, wherein the introducing the flowable material in the substantially vertical direction comprises:
inducing a substantially uniform flow front.

9. The method according to claim 1, wherein the introducing the flowable material comprises introducing the flowable material onto the active surface of the at least one semiconductor substrate.

10. The method according to claim 1, wherein the introducing the flowable material onto the active surface of the at least one semiconductor substrate in the substantially vertical direction comprises:
substantially preventing voids in the flowable material.

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11. The method according to claim 1, wherein the providing the at least one semiconductor substrate comprises:
providing an assembly including the at least one semiconductor substrate.

Claim 12. (canceled)

13. The method according to claim 11, wherein the providing the assembly comprises:
providing the assembly with the at least one semiconductor substrate comprising at least one semiconductor die having the conductive elements in the form of bond pads thereon, the at least one semiconductor die including conductive structures protruding from the bond pads.

Claims 14-15. (canceled)

16. The method according to claim 1, wherein the providing the at least one semiconductor substrate comprises:
providing at least one individual semiconductor die.

17. The method according to claim 16, wherein the providing the at least one individual semiconductor die comprises:
providing the at least one individual semiconductor die with conductive structures protruding therefrom to be received by and abut with the portions of the at least one cavity.

18. The method according to claim 1, wherein the providing the at least one semiconductor substrate comprises:
providing a large-scale semiconductor substrate.

19. The method according to claim 18, wherein the providing the large-scale

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semiconductor substrate comprises:

providing a plurality of semiconductor dice interconnected to each other, each of the plurality comprising the conductive elements in the form of bond pads and conductive structures protruding from the bond pads.

20. The method according to claim 18, wherein the providing the large-scale semiconductor substrate comprises:
providing at least a portion of a wafer.

21. The method according to claim 1, wherein the introducing the flowable material includes capillary action acting on the flowable material.

22. The method according to claim 1, wherein the introducing the flowable material includes positive pressure acting on the flowable material.

23. The method according to claim 1, wherein the introducing the flowable material includes negative pressure acting on the flowable material.

24. The method according to claim 6, wherein the filling the at least one cavity with the flowable material comprises substantially completely encapsulating the at least one semiconductor substrate.

Claim 25. (cancelled)

26. The method according to claim 1, wherein providing at least one semiconductor substrate having the active surface with conductive elements thereon comprises providing at least one semiconductor substrate having an active surface with conductive columns or pillars.

Claims 27-50. (canceled)

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51. A method for encapsulating a substrate that substantially prevents voids in an encapsulant, the method comprising:

- providing a transfer mold having an inner surface defining at least one mold cavity;
- providing at least one semiconductor substrate having an active surface with conductive elements thereon and a back surface thereof;
- positioning the at least one semiconductor substrate in the at least one mold cavity of the transfer mold so that portions of the inner surface of the transfer mold abut with the conductive elements of the active surface of the at least one semiconductor substrate;
- orienting the active surface of the at least one semiconductor substrate substantially vertically within the at least one mold cavity;
- configuring the portions of the inner surface of the transfer mold to comprise a plurality of recesses formed therein, each of the recesses having an imperforate boundary wall sized and configured to at least partially substantially conformally receive a portion of a corresponding conductive element protruding from the at least one semiconductor substrate; and
- introducing a flowable material into the at least one mold cavity so that the flowable material flows around the portions of the inner surface of the transfer mold abutting with the conductive elements on the active surface of the at least one substrate.

52. The method according to claim 51, wherein the providing the transfer mold comprises configuring the transfer mold so that the at least one cavity is non-horizontally oriented with at least one gate at a lower portion of the transfer mold and at least one vent at an upper portion of the transfer mold.

53. The method according to claim 52, wherein the introducing the flowable material comprises:

- substantially filling the at least one cavity in a non-horizontal direction.

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54. The method according to claim 53, wherein the substantially filling the at least one cavity comprises:

introducing the flowable material through the at least one gate until a single flow front of the flowable material contacts the at least one vent at the upper portion of the at least one cavity.

55. (canceled)

56. The method according to claim 51, wherein the introducing the flowable material comprises:

filling the at least one cavity until the single flow front of the flowable material contacts the at least one vent.

57. The method according to claim 56, wherein the filling the at least one cavity with the flowable material comprises:

at least partially encapsulating the at least one semiconductor substrate.

58. The method according to claim 51, wherein the introducing the flowable material comprises:

inducing a substantially uniform flow front.

59. The method according to claim 51, wherein the introducing the flowable material comprises permitting the flowable material to flow onto the active surface of the at least one semiconductor substrate.

60. The method according to claim 51, wherein the introducing the flowable material comprises:

substantially preventing voids in the flowable material.

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61. The method according to claim 51, wherein the providing the at least one semiconductor substrate comprises:
providing an assembly including the at least one semiconductor substrate.

Claim 62. (canceled)

63. The method according to claim 61, wherein the providing the assembly comprises:
providing the assembly with the at least one semiconductor substrate including at least one semiconductor die having the conductive elements in the form of bond pads thereon, the at least one semiconductor die including conductive structures protruding from the bond pads.

Claims 64-65. (canceled)

66. The method according to claim 51, wherein the providing the at least one semiconductor substrate comprises:
providing at least one individual semiconductor die.

67. (Cancelled)

68. The method according to claim 51, wherein the providing the at least one semiconductor substrate comprises:
providing a large-scale semiconductor substrate.

69. The method according to claim 68, wherein the providing the large-scale semiconductor substrate comprises:
providing a plurality of semiconductor dice interconnected to each other, each of the plurality comprising at least one of bond pads and conductive structures protruding from the bond pads.

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70. The method according to claim 68, wherein the providing the large-scale substrate comprises:
providing at least a portion of a wafer.

71. (previously presented) The method according to claim 51, wherein the introducing the flowable material includes capillary action acting on the flowable material.

72. (previously presented) The method according to claim 51, wherein the introducing the flowable material includes positive pressure on the flowable material.

73. (previously presented) The method according to claim 51, wherein the introducing the flowable material includes negative pressure on the flowable material.

74. (currently amended) The method according to claim 56, wherein the filling the at least one cavity with the flowable material comprises at least partially encapsulating the at least one semiconductor substrate.

75. (cancelled)

76. (currently amended) The method according to claim 51, wherein providing at least one semiconductor substrate having an active surface with conductive elements thereon comprises providing at least one semiconductor substrate having an active surface with conductive columns or pillars.

Claims 77-98. (canceled)